

13-Spindle Line Boring Machine

(Model 32-325)

13-Spindle Pneumatic Line Boring Machine

(Model 32-326)



Model 32-325
Shown with
Accessory 32-331
Stand



Model 32-326
Shown with
Accessory 32-331
Stand

PART NO. 449-01-651-0005 (0110)
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GENERAL SAFETY RULES

Woodworking can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. Safety equipment such as guards, push sticks, hold-downs, featherboards, goggles, dust masks and hearing protection can reduce your potential for injury. But even the best guard won't make up for poor judgment, carelessness or inattention. Always use common sense and exercise caution in the workshop. If a procedure feels dangerous, don't try it. Figure out an alternative procedure that feels safer. **REMEMBER:** Your personal safety is your responsibility.

This machine was designed for certain applications only. Delta Machinery strongly recommends that this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, **DO NOT** use the machine until you have first contacted Delta to determine if it can or should be performed on the product.

Technical Service Manager

Delta Machinery

4825 Highway 45 North

Jackson, TN 38305

(IN CANADA: 505 SOUTHGATE DRIVE, GUELPH, ONTARIO N1H 6M7)



WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.

2. **KEEP GUARDS IN PLACE** and in working order.

3. **ALWAYS WEAR EYE PROTECTION.** Wear safety glasses. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses. Also use face or dust mask if cutting operation is dusty. These safety glasses must conform to ANSI Z87.1 requirements. **NOTE:** Approved glasses have Z87 printed or stamped on them.

4. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".

5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

6. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.

7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.

8. **MAKE WORKSHOP CHILDPROOF** – with padlocks, master switches, or by removing starter keys.

9. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.

10. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

11. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

13. **DON'T OVERREACH.** Keep proper footing and balance at all times.

14. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.

16. **USE RECOMMENDED ACCESSORIES.** The use of accessories and attachments not recommended by Delta may cause hazards or risk of injury to persons.

17. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord. In the event of a power failure, move switch to the "OFF" position.

18. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.


20. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

21. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

22. **STAY ALERT, WATCH WHAT YOU ARE DOING, AND USE COMMON SENSE WHEN OPERATING A POWER TOOL. DO NOT USE TOOL WHILE TIRED OR UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.** A moment of inattention while operating power tools may result in serious personal injury.

23. **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or reconnected.

24. **THE DUST GENERATED** by certain woods and wood products can be injurious to your health. Always operate machinery in well ventilated areas and provide for proper dust removal. Use wood dust collection systems whenever possible.

25.  **WARNING: SOME DUST CREATED BY POWER SANDING, SAWING, GRINDING, DRILLING, AND OTHER CONSTRUCTION ACTIVITIES** contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
 - crystalline silica from bricks and cement and other masonry products, and
 - arsenic and chromium from chemically-treated lumber.
- Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SAVE THESE INSTRUCTIONS.

Refer to them often and use them to instruct others.

ADDITIONAL SAFETY RULES FOR LINE BORING MACHINE



WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **DO NOT OPERATE THIS MACHINE UNTIL** it is **assembled** and **installed** according to the instructions.
2. **OBTAIN ADVICE** from your **supervisor, instructor, or another qualified person** if you are not familiar with the operation of this machine.
3. **FOLLOW ALL WIRING CODES** and recommended electrical connections.
4. **FASTEN THE MACHINE** to a supporting surface.
5. **KEEP HANDS**, fingers, and hair away from rotating bits.
6. **KEEP DRILL BITS SHARP** and free of all rust and pitch.
7. **CHECK DRILL BITS** for damage. Properly secure drill bits prior to operating the machine.
8. **NEVER TURN THE MACHINE “ON”** before clearing the table of all objects (tools, scrap pieces, etc.).
9. **PREVENT THE WORKPIECE** from contacting the drill bits prior to operating the machine.
10. **ADJUST THE DEPTH STOP** prior to operating the machine.
11. **DO NOT ATTEMPT TO BORE HOLES** in a workpiece that does not have a flat surface, unless using suitable supports.
12. **SUPPORT WORKPIECES** firmly against fence.
13. **NEVER PERFORM LAYOUT**, assembly, or set-up work on the table while the machine is running.
14. **STOP THE MACHINE** before removing scrap pieces from the table.
15. **DISCONNECT THE MACHINE** from the power source before installing or removing accessories, before adjusting or changing set-ups, or when making repairs.
16. **DISCONNECT THE MACHINE** from the power source, and clean the table/work area before leaving the machine. **LOCK THE SWITCH IN THE “OFF” POSITION** to prevent unauthorized use.
17. **ADDITIONAL INFORMATION** regarding the safe and proper operation of this machine is available from the Power Tool Institute, 1300 Summer Avenue, Cleveland, OH 44115-2851. Information is also available from the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143-3201. Please refer to the American National Standards Institute ANSI 01.1 Safety Requirements for Woodworking Machines and the U.S. Department of Labor OSHA 1910.213 Regulations.

SAVE THESE INSTRUCTIONS.
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and use them to instruct others.

POWER CONNECTIONS

A separate electrical circuit should be used for your machines. This circuit should not be less than #12 wire and should be protected with a 20 Amp time lag fuse. If an extension cord is used, use only 3-wire extension cords which have 3-prong grounding type plugs and matching receptacle which will accept the machine's plug. Before connecting the motor to the power line, make sure the switch is in the "OFF" position and be sure that the electric current is of the same characteristics as indicated on the machine. All line connections should make good contact. Running on low voltage will damage the motor.

⚠ WARNING: DO NOT EXPOSE THE MACHINE TO RAIN OR OPERATE THE MACHINE IN DAMP LOCATIONS.

MOTOR SPECIFICATIONS

Your machine is wired for 120 volt, 60 HZ alternating current. Before connecting the machine to the power source, make sure the switch is in the "OFF" position.

GROUNDING INSTRUCTIONS

⚠ WARNING: THIS MACHINE MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

1. All grounded, cord-connected machines:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding type plugs and matching 3-conductor receptacles that accept the machine's plug, as shown in Fig. A.

Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected machines intended for use on a supply circuit having a nominal rating less than 150 volts:

If the machine is intended for use on a circuit that has an outlet that looks like the one illustrated in Fig. A, the machine will have a grounding plug that looks like the plug illustrated in Fig. A. A temporary adapter, which looks like the adapter illustrated in Fig. B, may be used to connect this plug to a matching 2-conductor receptacle as shown in Fig. B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. Whenever the adapter is used, it must be held in place with a metal screw.

NOTE: In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.

⚠ WARNING: IN ALL CASES, MAKE CERTAIN THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE HAVE A QUALIFIED ELECTRICIAN CHECK THE RECEPTACLE.

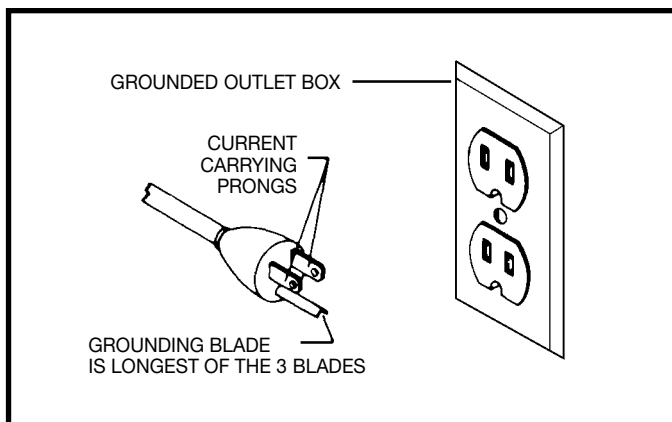


Fig. A

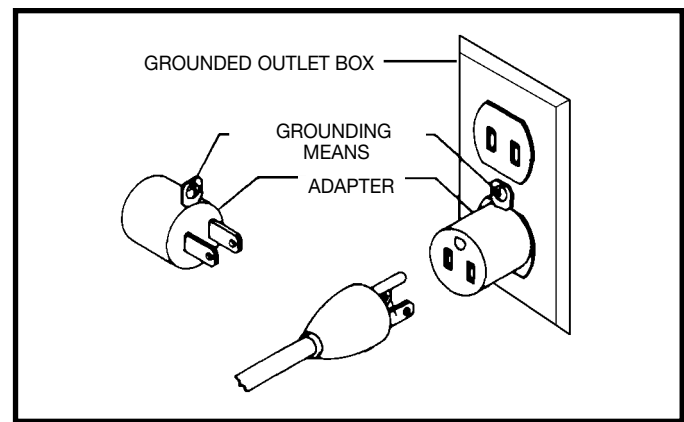


Fig. B

EXTENSION CORDS

Use proper extension cords. Make sure your extension cord is in good condition and is a 3-wire extension cord which has a 3-prong grounding type plug and matching receptacle which will accept the machine's plug. When using an extension cord, be sure to use one heavy enough to carry the current of the machine. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. Fig. D, shows the correct gauge to use depending on the cord length. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

MINIMUM GAUGE EXTENSION CORD			
RECOMMENDED SIZES FOR USE WITH STATIONARY ELECTRIC MACHINES			
Ampere Rating	Volts	Total Length of Cord in Feet	Gauge of Extension Cord
0-6	120	up to 25	18 AWG
0-6	120	25-50	16 AWG
0-6	120	50-100	16 AWG
0-6	120	100-150	14 AWG
6-10	120	up to 25	18 AWG
6-10	120	25-50	16 AWG
6-10	120	50-100	14 AWG
6-10	120	100-150	12 AWG
10-12	120	up to 25	16 AWG
10-12	120	25-50	16 AWG
10-12	120	50-100	14 AWG
10-12	120	100-150	12 AWG
12-16	120	up to 25	14 AWG
12-16	120	25-50	12 AWG
12-16	120	GREATER THAN 50 FEET NOT RECOMMENDED	

Fig. D

OPERATING INSTRUCTIONS

FOREWORD

Delta Models 32-325 & 32-326 are line boring machines. These line boring machines come with a large, 16"x29¾" table, which provides a large work space in front of the boring head for boring extra large boards.

UNPACKING AND CLEANING

Carefully unpack the machine and all loose items from the shipping container(s). Remove the protective coating from all unpainted surfaces. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover the unpainted surfaces with a good quality household floor paste wax.

NOTICE: THE MANUAL COVER PHOTO ILLUSTRATES THE CURRENT PRODUCTION MODEL. ALL OTHER ILLUSTRATIONS ARE REPRESENTATIVE ONLY AND MAY NOT DEPICT THE ACTUAL COLOR, LABELING OR ACCESSORIES.

LINE BORING MACHINE PARTS

INSTRUCTIONS LISTED AND SHOWN IN THIS MANUAL REFER TO BOTH THE 32-325 13-SPINDLE LINE BORING MACHINE AND 32-326 13-SPINDLE PNEUMATIC LINE BORING MACHINE UNLESS OTHERWISE NOTED.

⚠ WARNING: FOR YOUR OWN SAFETY, DO NOT CONNECT THE MACHINE TO THE POWER SOURCE UNTIL THE MACHINE IS COMPLETELY ASSEMBLED AND YOU HAVE READ AND UNDERSTOOD THE ENTIRE INSTRUCTION MANUAL.

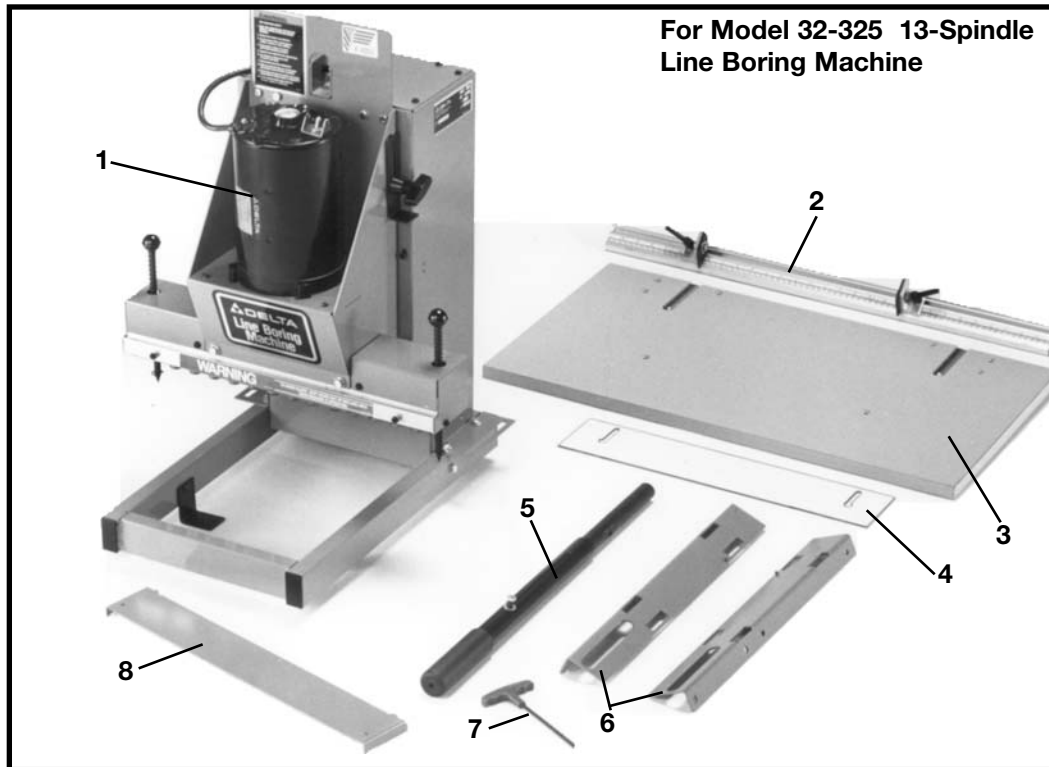


Fig. 2

- 1 - Boring Machine
- 2 - Fence
- 3 - Table
- 4 - Clear Plastic Guard
- 5 - Lowering and Raising Handle
- 6 - Table Brackets
- 7 - Wrench
- 8 - Gage for Aligning Fence to Drill Head

- 10 - Pneumatic Boring Machine
- 11 - Fence
- 12 - Table
- 13 - Clear Plastic Guard
- 14 - Table Brackets
- 15 - Wrench
- 16 - Gage for Aligning Fence to Drill Head

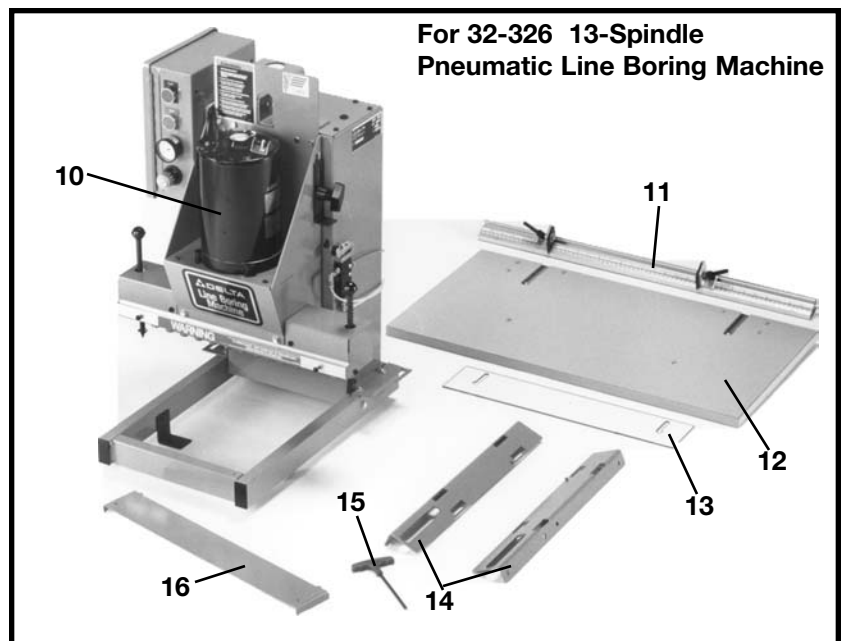


Fig. 3

- 18 - Table Bracket Slides (4)
- 19 - Spacers (2)
- 20 - 1/4" Flat Washers (2)
- 21 - 1/4" Lockwashers (2)
- 22 - 1/4-20x1-1/2" Hex Screws (2)
- 23 - Table Lock Knobs (2)
- 24 - 5/16" Flat Washers (2)
- 25 - 5/16-18x3/4" Carriage Bolts (2)
- 26 - 1/4-20 Hex Lock Nuts (4)
- 27 - 1/4-20x1-1/4" Flat Head Screws (4)
- 28 - 5/16-24x1/4" Hex Set Screws (13)

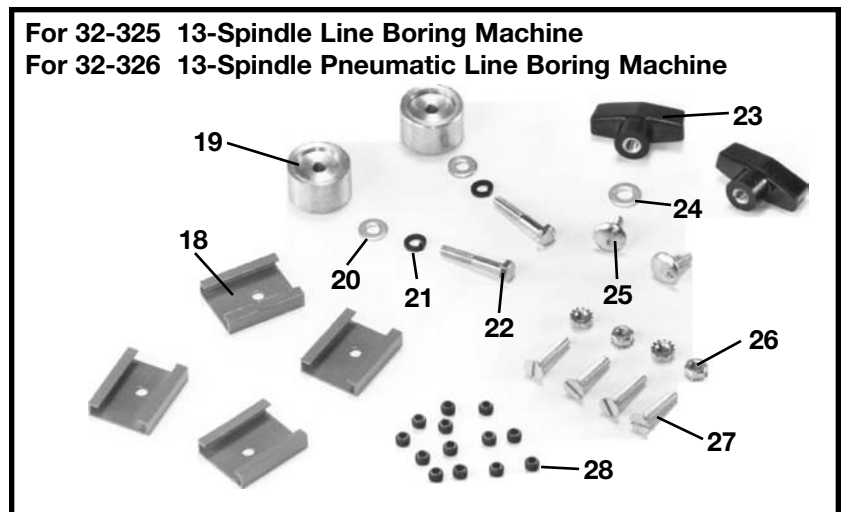


Fig. 4

- 30 - 1/4-20x1-1/4" Flat Head Screws (4)
- 31 - 1/4-20 Hex Lock Nuts (4)
- 32 - Air Clamp Brackets (2)
- 33 - Air Clamps (2)
- 34 - Rubber Feet for Air Clamps (2)
- 35 - Air Cylinder
- 36 - Guard
- 37 - 1-3/8"-12 Hex Nut
- 38 - Air Filter

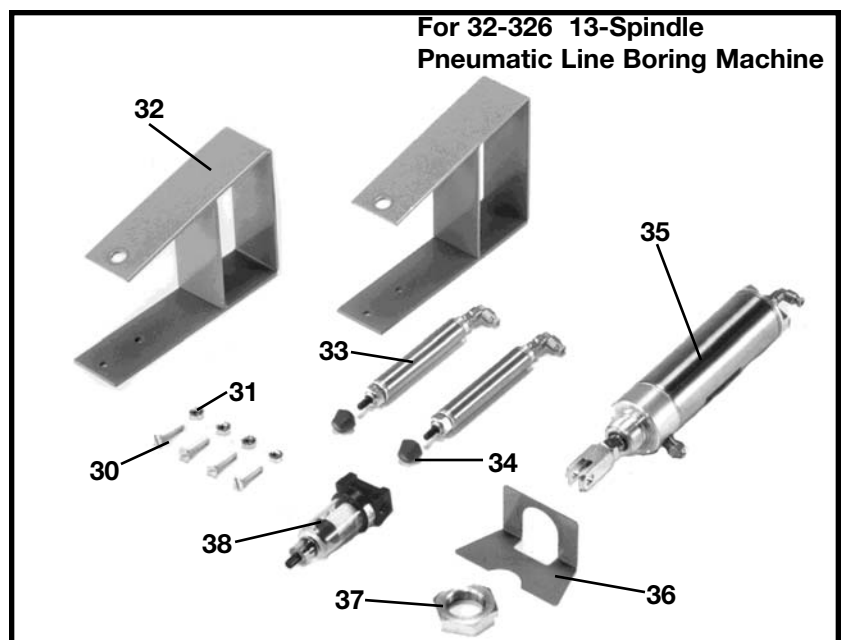


Fig. 5

ASSEMBLY AND ADJUSTMENTS

ASSEMBLING ACCESSORY 32-331 STAND

If you purchased the accessory 32-331 steel stand for use with your boring machine, assemble the stand as shown in Fig. 6, using thirty-two 5/8" long carriage bolts, flat washers and hex nuts. Align the holes in the legs with the holes in the braces, insert a 5/16-18x5/8" carriage bolt through the hole in the leg and the hole in the brace, place a 5/16" flat washer onto the carriage bolt and thread a 5/16-18 hex nut onto the carriage bolt and hand tighten. Repeat this process for the thirty-one remaining holes. **NOTE:** All braces mount to the inside of the legs. **NOTE:** For ease in identifying and assembling the stand, the two top front and rear braces (A) are 13-1/2" long; the two top side braces (B) are 16-1/2" long; the two bottom front and rear braces (C) are 19-1/2" long; and the two bottom side braces (D) are 22-1/2" long. The four legs (E) are 31-1/2" long. **NOTE: Do not completely tighten the stand mounting hardware until the machine is assembled to the stand.** Assemble the four plastic feet (G) to the bottom of each leg (E) as shown.

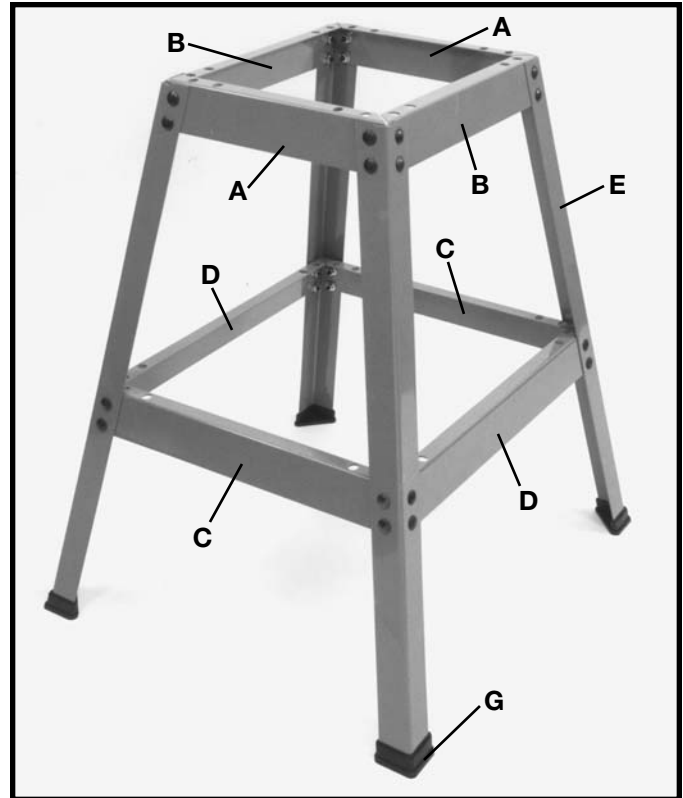


Fig. 6

ASSEMBLING MACHINE TO STAND

If you purchased the accessory 32-331 steel stand for use with your boring machine, assemble the machine to the stand using four 5/16-18x3/4" hex head screws, one of which is shown at (A) Fig. 7, 5/16" flat washers, 5/16" lockwashers and 5/16-18 hex nuts supplied with the accessory stand. **NOTE:** Align the four holes in the machine with the four holes in the stand. Insert the 3/4" hex head screw through the top of the machine and stand, place a flat washer onto the 3/4" hex head screw, then place a lockwasher onto the 3/4" hex head screw, and thread a nut onto the screw and tighten securely. Repeat this process for the three remaining holes.

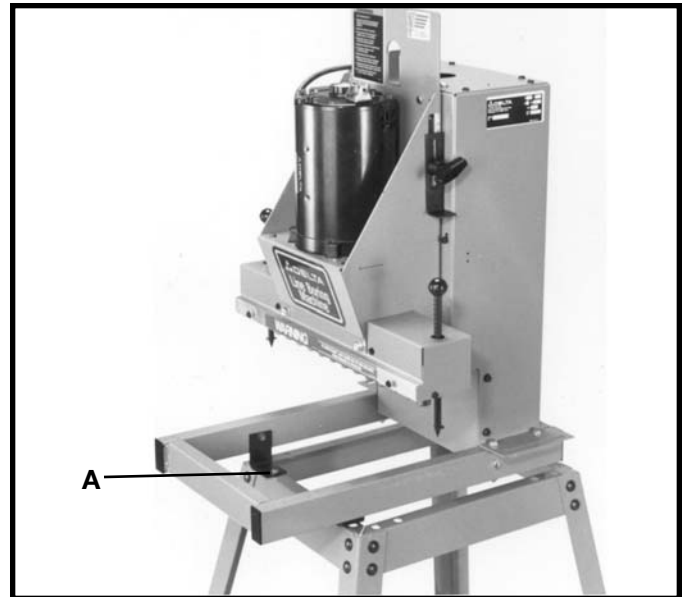


Fig. 7

FASTENING MACHINE TO A SUPPORTING SURFACE

If you are using the boring machine without the accessory 32-331 steel stand, the machine **MUST** be fastened to a supporting surface using suitable hardware, not supplied by Delta.

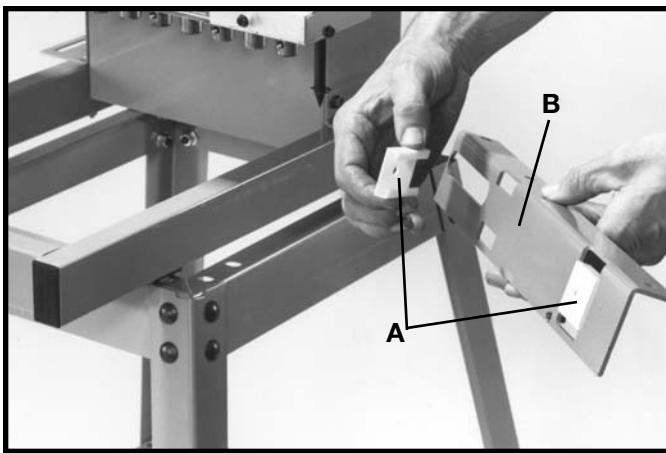


Fig. 8

ASSEMBLING TABLE TO MACHINE

1. Clip the two table slides (A) Fig. 8, to the table bracket (B) as shown.
2. Clip the remaining two table slides to the other table bracket in the same manner.
3. Center table (C) Fig. 9, on the machine frame as shown.
4. Position table bracket (B) Fig. 10, against machine frame (D) and underneath table (C) as shown, lining up the two holes (E) Fig. 11, in the table with the two holes (F) Fig. 10, on top of table bracket (B) Fig. 10.

5. Fasten the table to the table bracket using the two 1/4-20x1-1/4" flat head screws (E) Fig. 11, and two 1/4-20 lock nuts (F) Fig. 10. **NOTE: DO NOT TIGHTEN HARDWARE AT THIS TIME.**

6. Assemble the remaining table bracket to the other side of the table and frame in the same manner.
7. Insert the 5/16-18x3/4" carriage bolt (G) Fig. 12, up through square hole (H) and slot (J) as shown, and fasten in place using the 5/16" flat washer (K) Fig. 13 and lock knob (L). **NOTE: DO NOT TIGHTEN HARDWARE AT THIS TIME.**

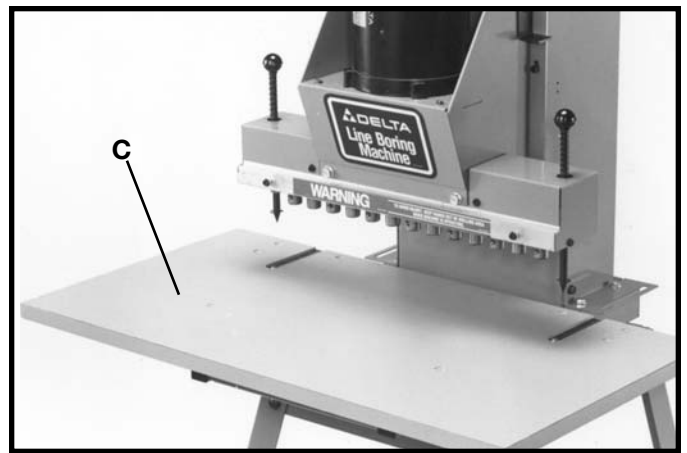


Fig. 9

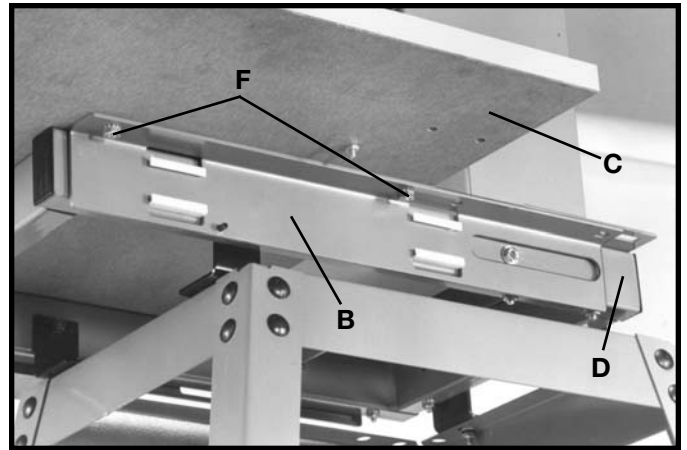


Fig. 10

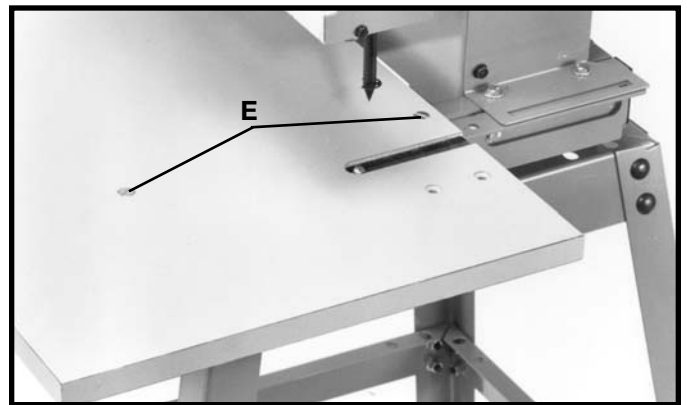


Fig. 11

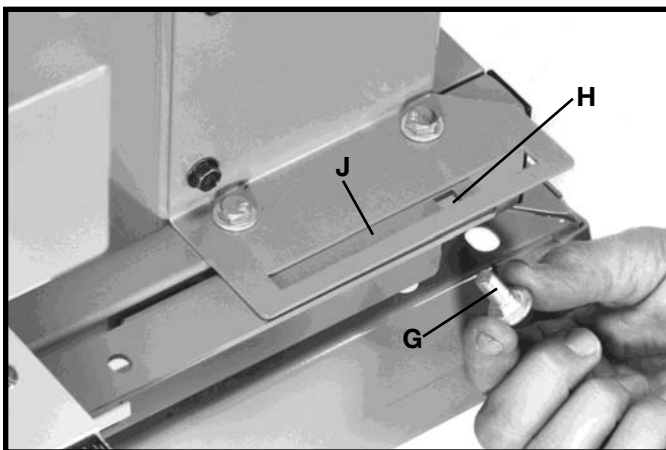


Fig. 12

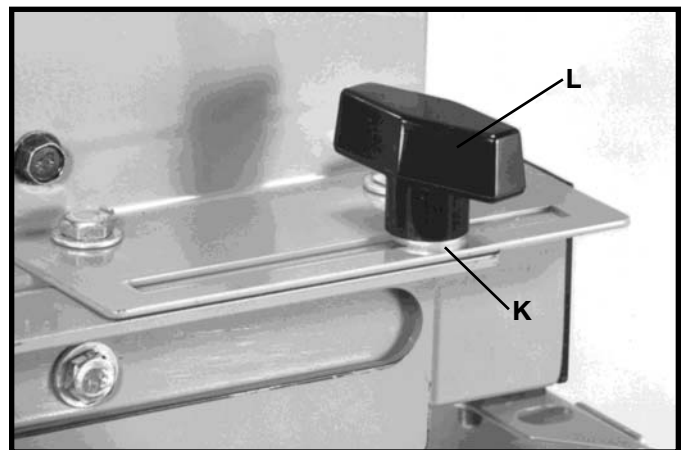


Fig. 13

ASSEMBLING FENCE TO MACHINE

1. Place spacer (A) Fig. 14, over hole (B) in table bracket with large countersunk end of spacer (A) in the up position.
2. Place a 1/4" lockwasher (C) Fig. 14, and a 1/4" flat washer (D) on the 1/4-20x1-1/2" hex head screw (E) and insert screw (E) up through hole (B) in table bracket and through hole in spacer (A). Thread screw (E) into threaded hole (F) on bottom of fence. **NOTE: DO NOT TIGHTEN HARDWARE AT THIS TIME.**
3. Assemble remaining spacer to opposite end of fence in the same manner.
4. Figure 15 illustrates the fence (G) assembled to the table bracket. **NOTE:** Do not completely tighten the two screws, one of which is shown at (E), at this time.

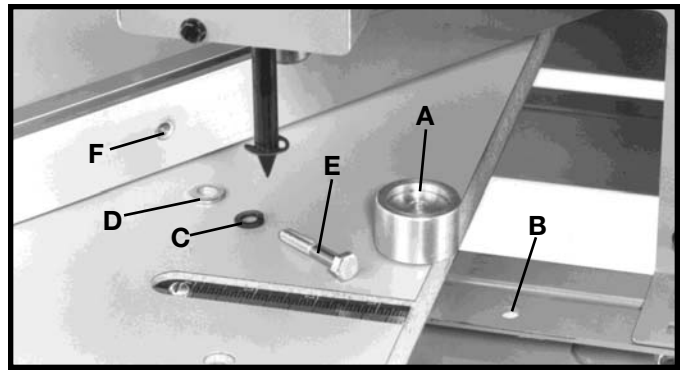


Fig. 14

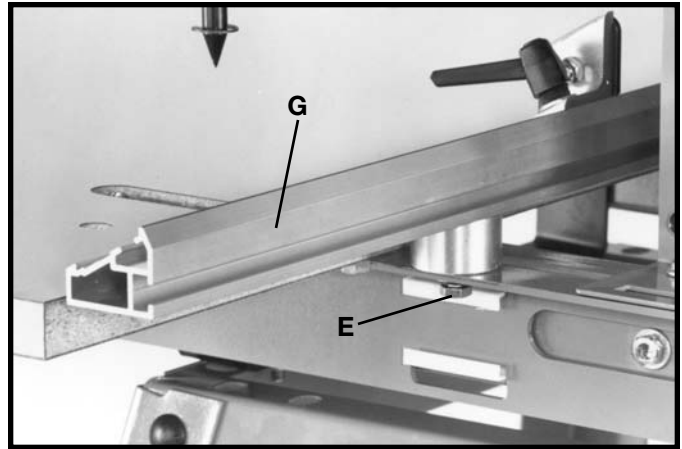


Fig. 15

ALIGNING FENCE PARALLEL TO LINE BORING HEAD

1. Set the right fence stop to 9 inches on the fence scale and the left fence stop should be moved out beyond the 9 inch mark. Position gage (A) Fig. 16, on table as shown, with points of both indexing pins (B) over holes (C) in gage.
2. Unscrew and remove knobs (D) Fig. 16, from top of indexing pins.
3. Allow indexing pins (B) Fig. 17, to lower until points of indexing pins engage the two holes in gage (A) as shown.

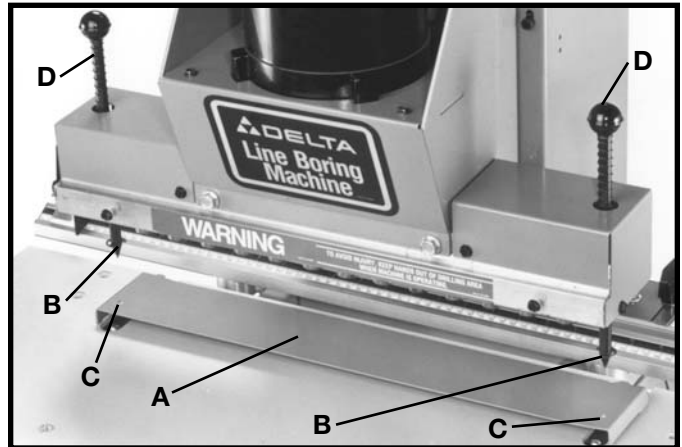


Fig. 16

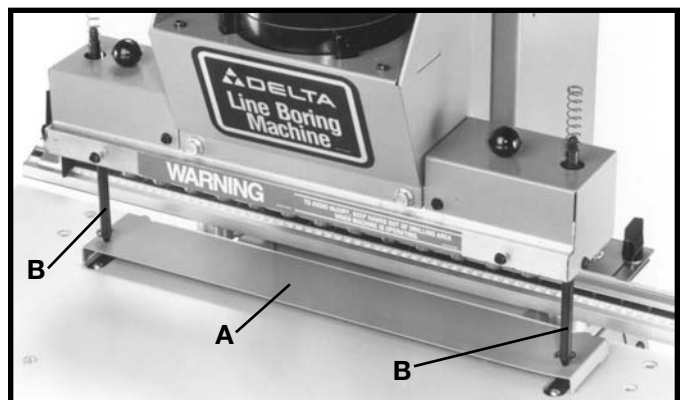


Fig. 17

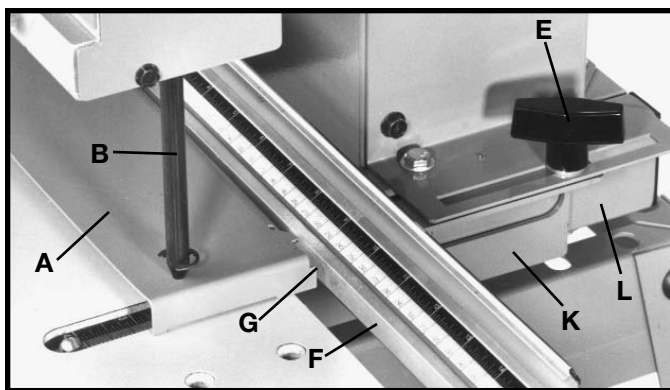


Fig. 18

4. With index pins (B) Fig. 18, engaged with holes in gage (A), loosen table lock knobs, one of which is shown at (E), and move table until front end of fence (F) is approximately 1/32" away from gage at point (G) on each end of the gage. Then tighten the table lock knobs (E).

5. Using a small "C" clamp (not supplied), secure table bracket (K) Fig. 18, to machine frame (L) at a point between the two sides to avoid movement. Clamp the other table bracket to the machine frame in the same manner at the other side of the machine.

6. Loosen the two screws (E) Fig. 15, that fasten fence (F) Fig. 19, to the machine and move fence (F) until front surface of fence contacts gage at point (G) as shown, at each end of the gage. Move the fence left or right until the right fence stop, that was set in **STEP 1**, contacts the gage at point (H). Then tighten the fence mounting hardware. **NOTE: FENCE STOP IS NOT SHOWN FOR CLARITY.**

7. Refer to the following instructions "**ADJUSTING TABLE PARALLEL TO FENCE.**"

ADJUSTING TABLE PARALLEL TO FENCE

1. Remove the gage (A) Fig. 18. The points of the index pins (B) Fig. 18, should point to the 2-1/4" mark on both scales.

2. If an adjustment is necessary, loosen four screws (C) Fig. 20, that fasten the table to the machine frame and adjust the table until index pins (B) point to the 2-1/4" mark on scales (A). **IMPORTANT:** Make sure the table mounting brackets are held securely against the machine frame and tighten four screws (C).

3. Replace knobs (D) Fig. 21, to top of indexing pins (B) as shown.

NOTE: The space between the rear of the table and the front of the fence is for chip removal.

4. Remove two clamps temporarily assembled in **STEP 5** of section "**ALIGNING FENCE PARALLEL TO LINE BORING HEAD.**"

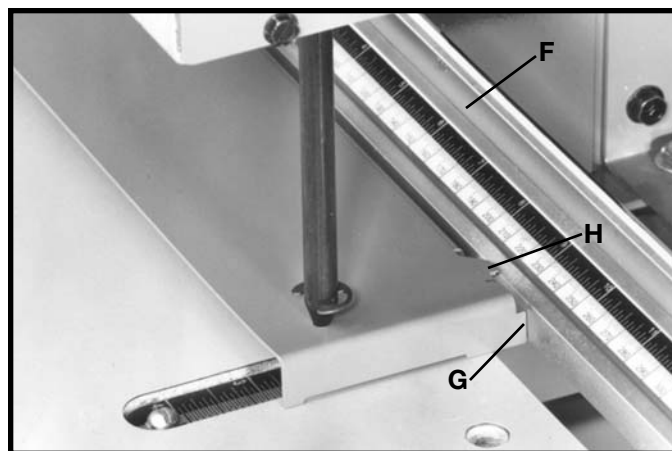


Fig. 19

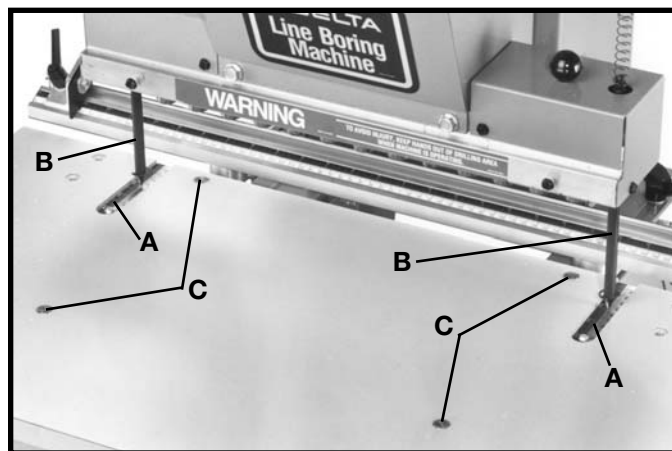


Fig. 20



Fig. 21

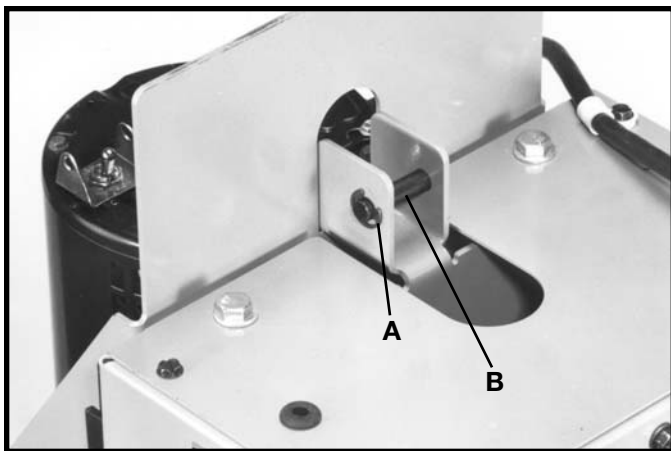


Fig. 22

ASSEMBLING HEAD LOWERING AND RAISING HANDLE (For 32-325 Line Boring Machine Only)

1. Remove retaining ring (A) Fig. 22, and remove connecting pin (B).
2. Insert end of handle (C) Fig. 23, into head assembly as shown and fasten handle in place by reassembling connecting pin that was removed in **STEP 1**, through hole in end of handle. Replace retaining ring (A).

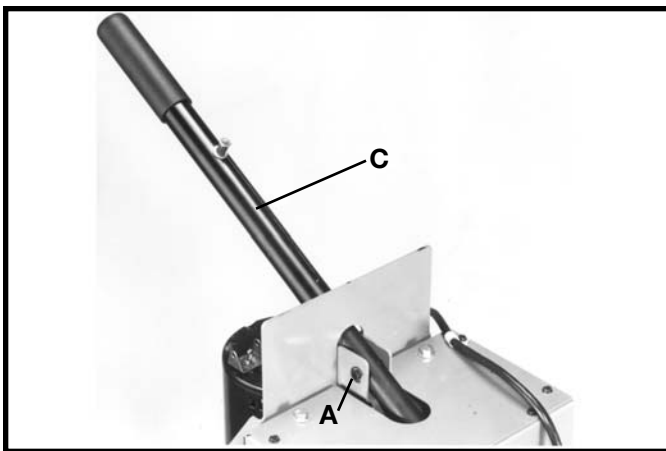


Fig. 23

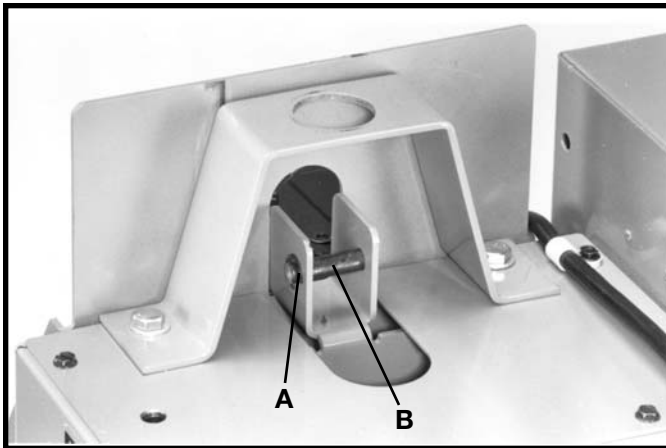


Fig. 24

ASSEMBLING HEAD LOWERING AND RAISING AIR CYLINDER (For 32-326 Pneumatic Line Boring Machine Only)

1. Remove retaining ring (A) Fig. 24, and connecting pin (B).
2. Place guard (C) Fig. 25, under bracket (D) as shown.

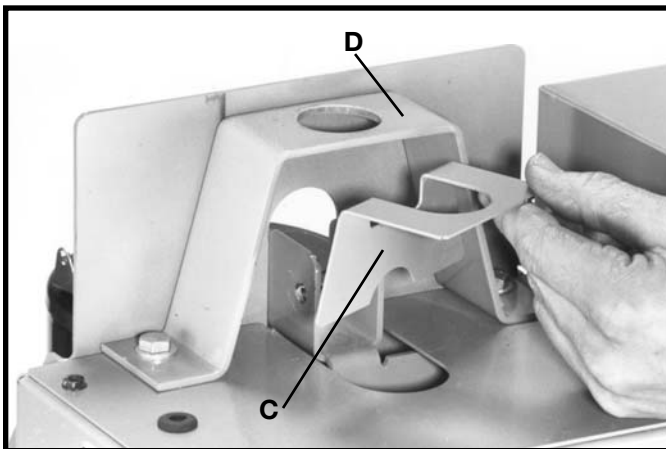


Fig. 25

3. Assemble end of air cylinder (E) Fig. 26, down through hole in top of bracket (D) and through hole in guard that was held in place in **STEP 2**. Using the 1-3/8" hex nut (F), fasten air cylinder in place by turning air cylinder (E) and nut (F). Make certain the guard that was held in place in **STEP 2**, does not contact the head assembly after tightening hex nut (F). **NOTE:** Air fittings (G) and (H) should point to the rear of the machine as shown. Make certain hex nut (F) is positioned so the flat on the nut is parallel to front of support bracket (D). **IMPORTANT: THE FLAT ON THE NUT (F) MUST BE PARALLEL TO THE FRONT OF SUPPORT BRACKET (D), IF NUT IS NOT PARALLEL TO THE SUPPORT BRACKET THE NUT WILL BIND AGAINST SLIDE PLATE (X) WHILE OPERATING.**

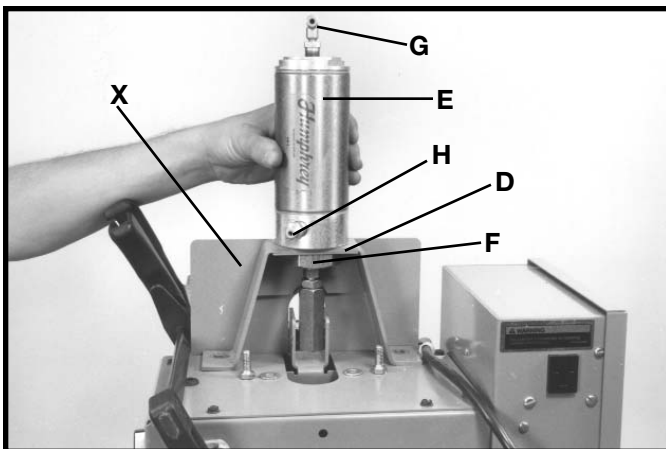


Fig. 26

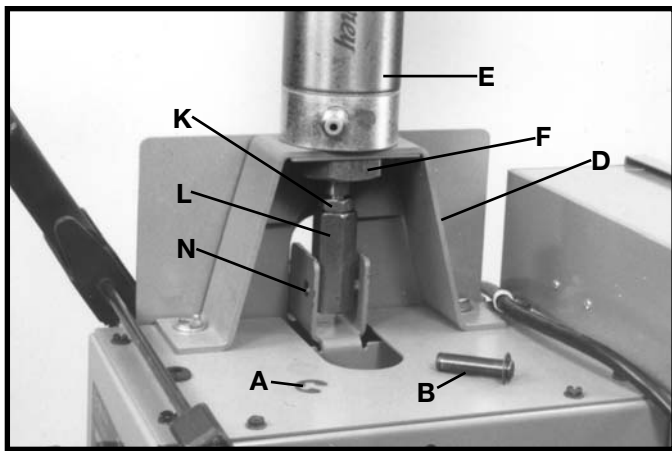


Fig. 27

4. Make certain air cylinder rod is retracted completely into cylinder (E) Fig. 27. Loosen locknut (K) Fig. 27, and unscrew hex end of clevis rod (L) until holes line up with holes in bracket (N). Using retaining clip (A) and retaining pin (B), which were removed in **STEP 1**, fasten clevis (L) to bracket (N). Retighten locknut (K) Fig. 27. **NOTE:** It may be necessary to loosen screws (R) Fig. 28, in order to get pin to line up with clevis.

5. Insert black air supply line (S) Fig. 28, into top fitting (G) of the air cylinder and blue air supply line (V) into bottom fitting (H) of the air cylinder as shown. **NOTE:** Push end of air lines as far as they will go into the fittings.

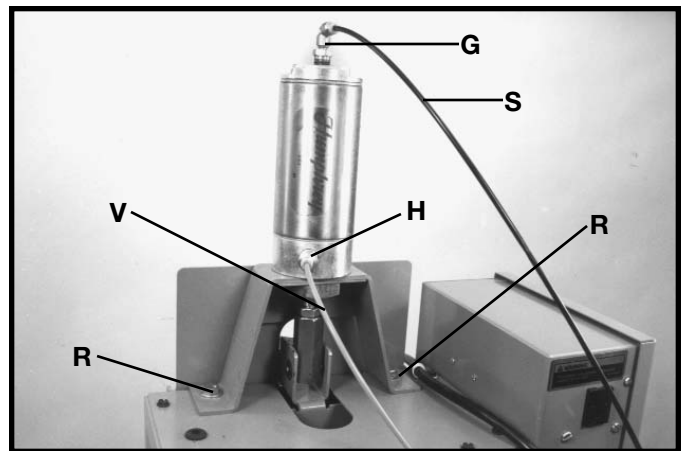


Fig. 28

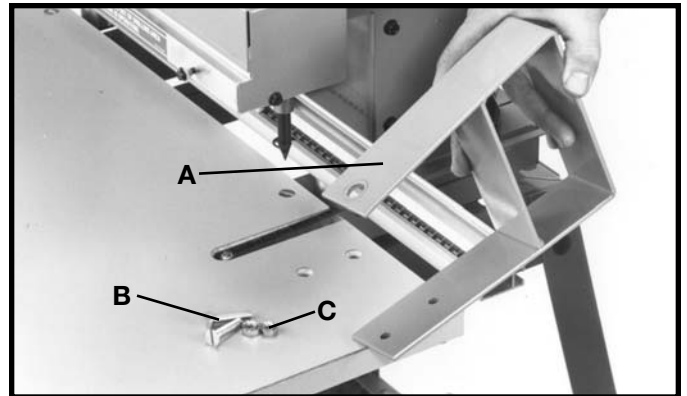


Fig. 29

ASSEMBLING TABLE AIR CYLINDER CLAMPS

(For 32-326 Pneumatic Line Boring Machine Only)

1. Assemble clamp bracket (A) Fig. 29, to bottom of table using two 1/4-20x1-1/4" flat head screws (B) and 1/4-20 hex lock nuts (C).

2. Figure 30 illustrates one of the two clamp brackets (A) assembled to the table with the two 1-1/4" long flat head screws (B). Assemble remaining clamp bracket to other end of table in the same manner.

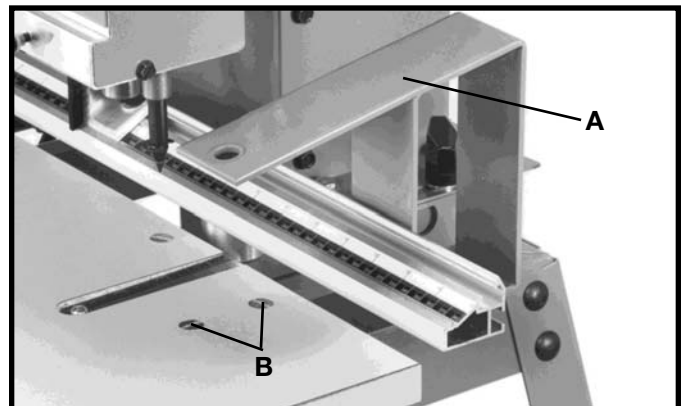


Fig. 30

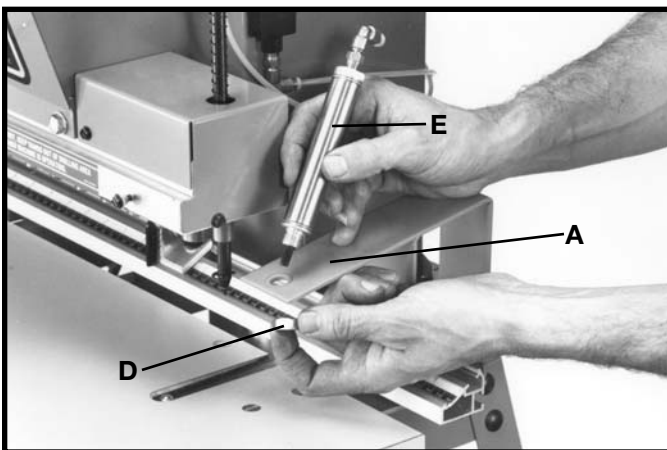


Fig. 31

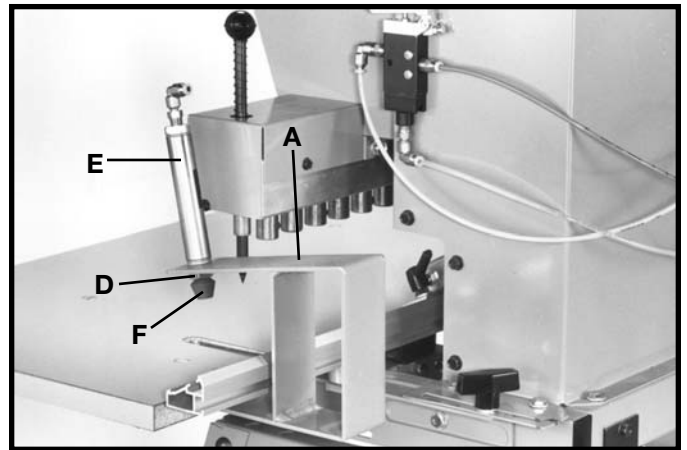


Fig. 32

3. Remove jam nut (D) Fig. 31, from bottom end of air cylinder clamp (E) and assemble air cylinder clamp (E) Fig. 32, to clamp bracket (A) Fig. 31, using jam nut (D). Thread rubber foot (F) Fig. 32, onto bottom of air cylinder clamp (E) as shown. Assemble remaining air cylinder clamp to other clamp bracket in the same manner.

4. Insert red air lines (G) Fig. 33, into air fittings (H) located on top of each air cylinder clamp (E). Push end of air line (G), as far as it will go into fitting (H).

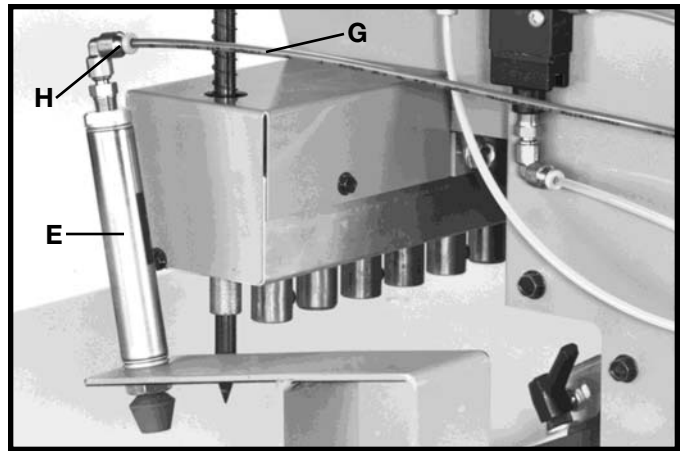


Fig. 33

ASSEMBLING AIR FILTER

(For 32-326 Pneumatic Line Boring Machine Only)

Thread air filter (A) Fig. 34, onto threaded stud (C) on side of air and electric control box (B) as shown. A 1/4" female pipe thread is supplied on both sides of the air filter for connecting the air filter to the threaded stud as shown, and for connecting air to the machine. **NOTE:** An air flow directional arrow is supplied on the filter to help insure correct assembly. **NOTE:** Quick connect (D) is not supplied with the machine.

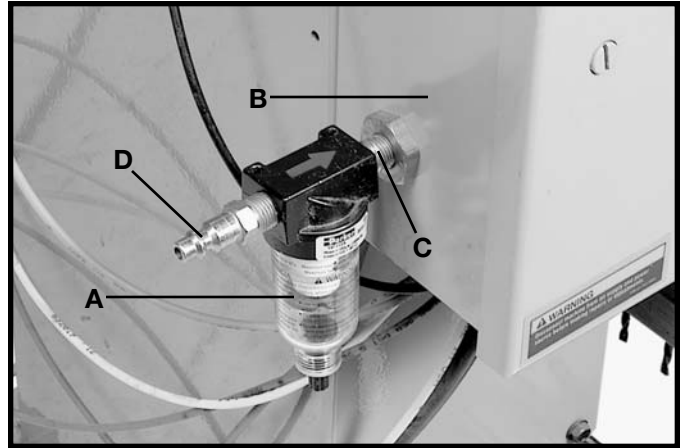


Fig. 34

ASSEMBLING BORING BITS TO SPINDLES

NOTE: This machine will only accept bits with 10mm shanks.

1. Thirteen set screws (A) are supplied with your machine and are to be threaded partway into each spindle, as shown in Fig. 35, with T-wrench supplied.

2. Insert boring bits (B) Fig. 36 (not supplied with boring machine), into spindles (C). Push bit (B) in as far as possible and tighten set screws (A) against flat on bit.

NOTE: With the 13-Spindle Boring Machine, thirteen bits are required, seven right hand rotation and six left hand rotation. A right hand rotation bit is inserted into the center spindle and every other spindle to the right and left. Insert left hand rotation bits into the remaining spindles. Fig. 36 illustrates all thirteen bits assembled to the boring head.

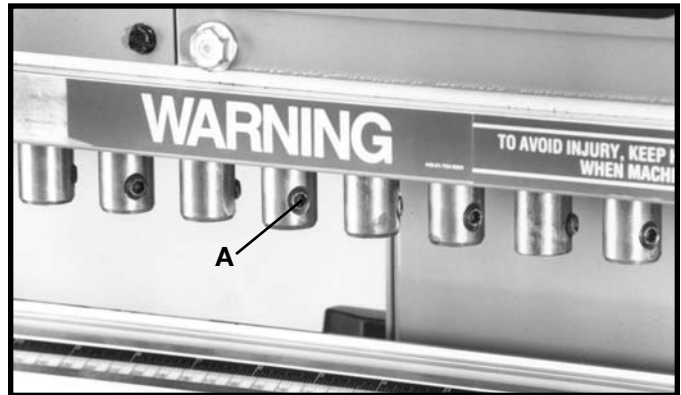


Fig. 35

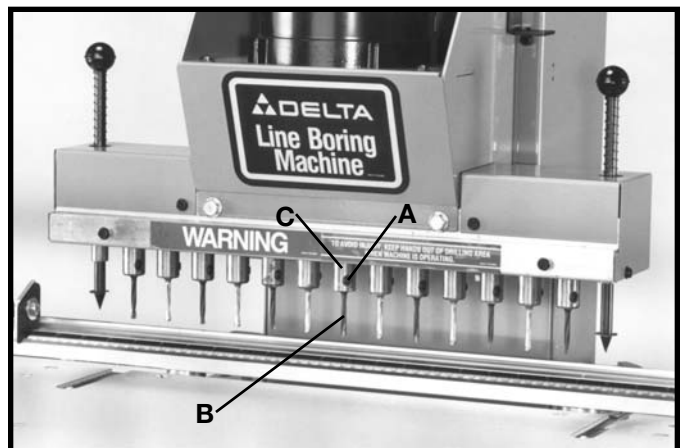


Fig. 36

ALIGNING BORING BITS

(For 32-325 Line Boring Machine Only)

1. Place a flat piece of wood (A) Fig. 37, on the table and against the fence as shown. Pull operating handle downward until **ANY ONE** boring bit (B) first contacts the top of the wood surface (A). **NOTE:** If all boring bits (B) contact the top surface of the wood at the same time, no alignment is necessary.

2. If any of the boring bits (B) Fig. 37, are not contacting the wood surface (A), remove each bit that does not contact the board one at a time. Loosen the set screw in the shank end of the bit by the same amount that the bit does not contact the wood. Reassemble the bit into the same spindle as far as it will go, and tighten the spindle set screw. After all bits have been adjusted, go back to step 1 and recheck the alignment.

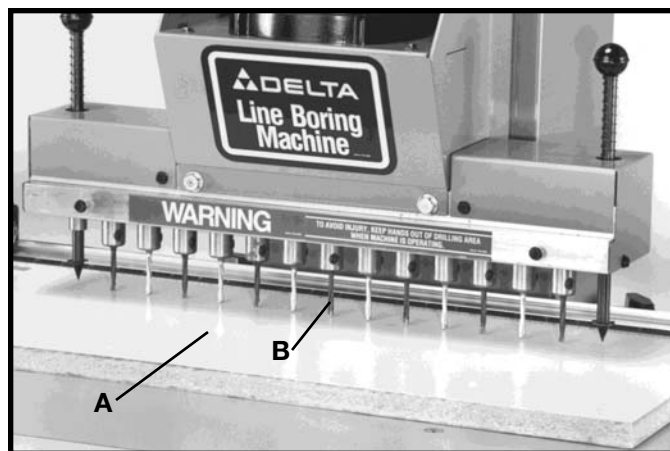


Fig. 37

ALIGNING BORING BITS

(For 32-326 Pneumatic Line Boring Machine Only)

1. Cut a straight piece of wood (A) Fig. 38, two inches high by sixteen inches long. Place the wood (A) on the table directly underneath the 13 boring bits (B) as shown.

2. If any of the boring bits (B) Fig. 38, are not contacting the wood surface (A), remove each bit that does not contact the board one at a time. Loosen the set screw in the shank end of the bit by the same amount that the bit does not contact the wood. Reassemble the bit into the same spindle as far as it will go, and tighten the spindle set screw. After all bits have been adjusted, go back and recheck the alignment.

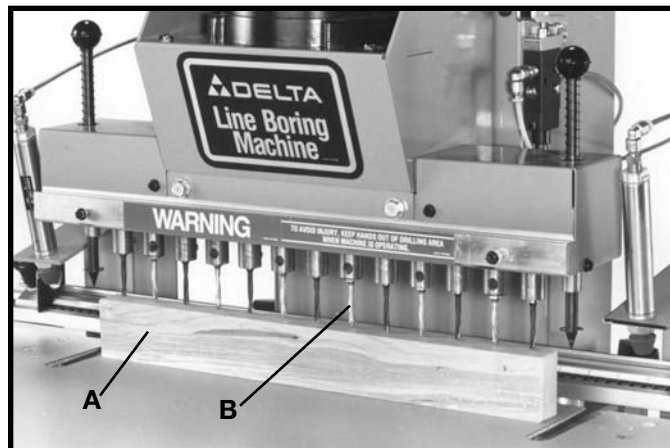


Fig. 38

ASSEMBLING CLEAR PLASTIC GUARD

1. Remove protective cover from guard.

2. Assemble the clear plastic guard (A) Fig. 39, to the front of the boring head making sure the two slots (B) are engaged with the two spacers and screws (C). **IMPORTANT: It will be necessary to bend the guard (A) outward slightly at the center, as shown, when assembling the guard.**

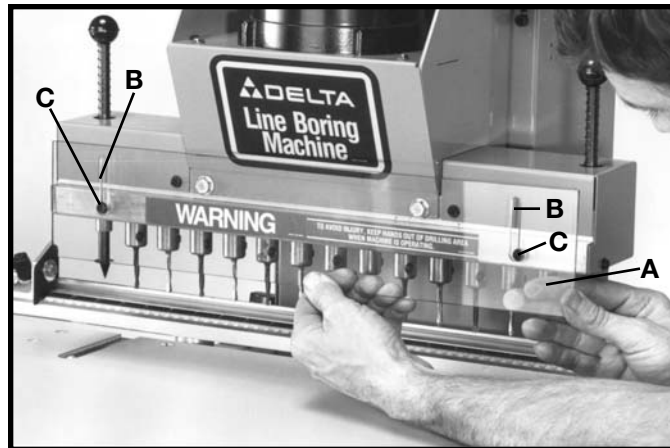


Fig. 39

WRENCH STORAGE

A hole and rubber grommet (A) Fig. 41, is provided on the top of the machine to store the wrench (B) supplied as shown.



Fig. 41

CONNECTING AIR TO MACHINE

(For 32-326 Pneumatic Line Boring Machine Only)

A 1/4" female pipe thread (A) Fig. 43, is provided on the air filter for connecting the air line to the machine. An air supply of 90 psi is recommended for best results and this air supply must not exceed 125 psi.

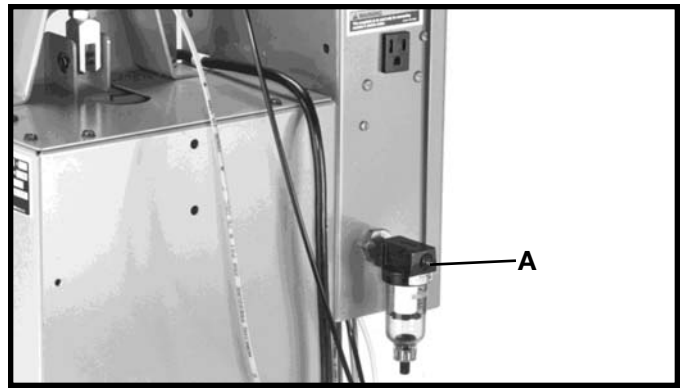


Fig. 43

ADJUSTING AIR PRESSURE

(For 32-326 Pneumatic Line Boring Machine Only)

An air pressure gage (A) Fig. 44, and regulator (B) are supplied to regulate the air pressure used to operate the machine. To adjust the air pressure, pull out and turn regulator (B) until the correct air pressure is indicated on the gage (A), push regulator (B) back into the locked position. For best results set pressure at 90 psi.

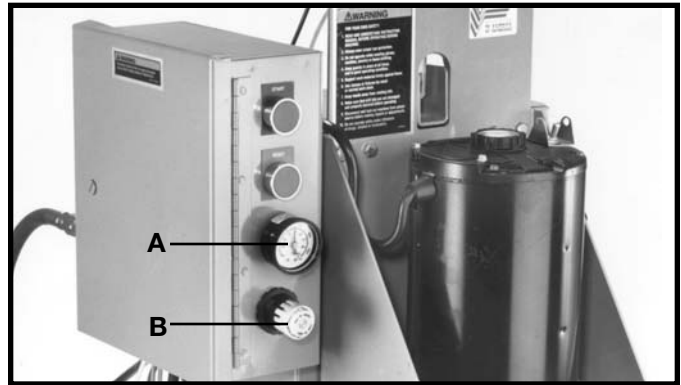


Fig. 44

OPERATING CONTROLS AND ADJUSTMENTS

STARTING AND STOPPING MACHINE

(For 32-325 Line Boring Machine Only)

The switch (A) Fig. 45, is located on the top of the motor. To turn the machine “ON”, move the switch (A) to the ON position and to turn the machine “OFF”, move the switch (A) to the OFF position.



Fig. 45

STARTING AND STOPPING MACHINE

(For 32-326 Pneumatic Line Boring Machine Only)

1. Plug the motor cord (A) Fig. 46, into outlet (B) located on rear of the air and electric control box as shown.
2. Move the motor on-off switch (C) Fig. 47, to the "ON" position. The motor will not start at this time.

CAUTION: Make sure the area under the head is free of all obstacles and hands before preceding to the next step.

3. Press in and hold the start button (D) Fig. 47. This will start the machine and begin the operating cycle of the boring head. At completion of the operating cycle, the machine will shut off and you can release the start button (D). If you release the start button (D) at any time during the operating cycle, the motor will shut off and the boring head will return to the up position.

4. If the motor does not start, press the reset button (E) Fig. 47. If the machine still does not start, refer to section "ADJUSTING AIR PRESSURE."

CAUTION: DO NOT USE THIS RECEPTACLE OUTLET (B) FIG. 46, FOR ANY OTHER ELECTRICAL USE OTHER THAN THE UNIT MOTOR.

LOCKING SWITCH IN THE "OFF" POSITION

IMPORTANT: When the machine is not in use, the switch should be locked in the OFF position using a padlock (A) Fig. 48, with a 3/16" diameter shackle to prevent unauthorized use.

LOWERING BORING HEAD

(For 32-325 Line Boring Machine Only)

To lower the boring head (A) Fig. 49, pull down on handle (B). After holes have been bored, return handle to the up position.

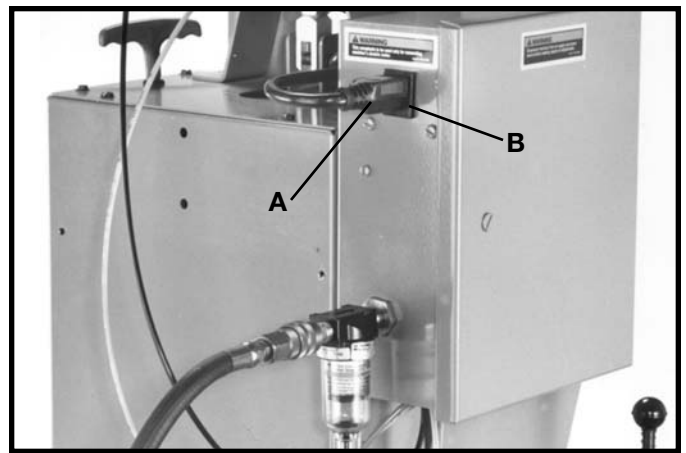


Fig. 46

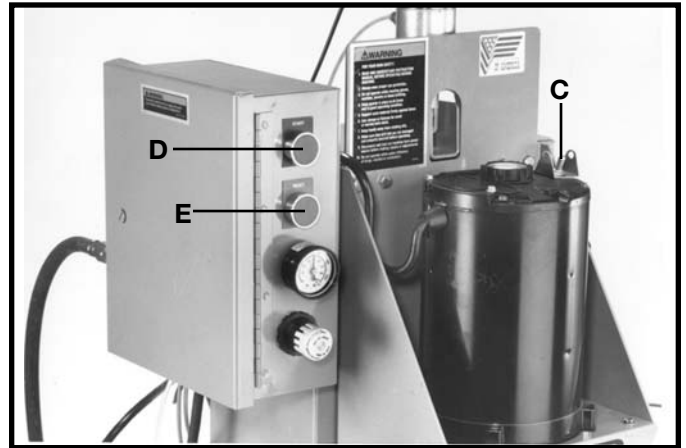


Fig. 47



Fig. 48

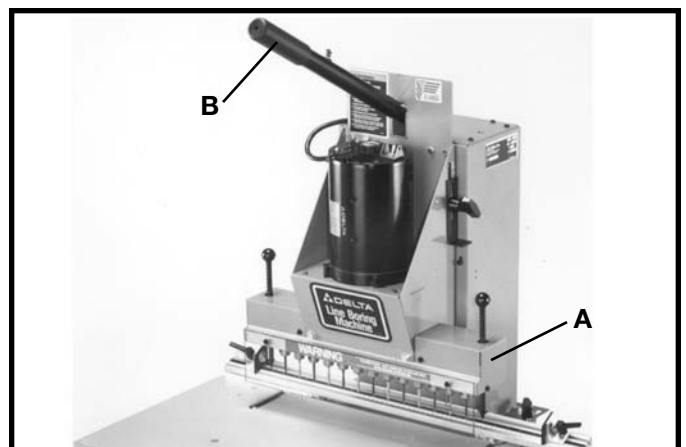


Fig. 49

MULTI-POSITION LOWERING HANDLE

(For 32-325 Line Boring Machine Only)

For extra leverage when boring holes, the handle (B) Fig. 50, can be pulled out as desired to increase leverage, as shown. To move the handle (B) out of the way when not in use, simply push in on handle.

CONTROLLING DOWNWARD TRAVEL OF BORING HEAD

(For 32-325 Line Boring Machine Only)

A stop is provided to set the depth of the boring bits above the table surface. To control the downward travel of the boring head, loosen lock knob (A) Fig. 51, and move stop bracket (B) up or down until edge (C) of stop bracket lines up with the desired mark on scale (D) you wish the boring bits to be above the table surface at the completion of the boring operation. Then tighten lock knob (A). A stop screw (E) is provided to stop the boring head from lowering when bottom of stop bracket (B) contacts stop screw (E). There is another stop (A) Fig. 51, provided on the left side of the machine to insure an even depth across the line of holes to be bored. Set the stop on the left side of the machine after the stop on the right side of the machine has been set. Lower the boring head until it contacts the stop that has been set on the right side of the machine and set the left side stop accordingly.

ADJUSTING STOP SCREW

1. Set the bracket (B) Fig. 51, so that the edge (C) aligns with the "0" mark on the scale (D).
2. Pull down on the handle (B) Fig. 50, the stop bracket (B) Fig. 51, should contact the stop screw (E) Fig. 51 at the same time that the bits touch the table.
3. If the bits do not touch table, loosen the stop screw (E) Fig. 51 and adjust the stop screw up or down to just touch the stop bracket at the same time that the bits touch the table, and tighten the stop screw (E).

CONTROLLING DOWNWARD TRAVEL OF BORING HEAD

(For 32-326 Pneumatic Line Boring Machine Only)

1. A stop is provided to set the depth of the boring bits above the table surface. To control the downward travel of the boring head, loosen lock knob (A) Fig. 52, and move stop bracket (B) up or down until the edge (C) of stop bracket lines up with the desired mark on scale (D) you wish the boring bits to be above the table surface at the completion of the boring operation. Then tighten lock knob (A). A limit switch (E) is provided to stop the boring head from lowering. When bottom of stop bracket (B) contacts limit switch (E) the head will then automatically return to the up position.

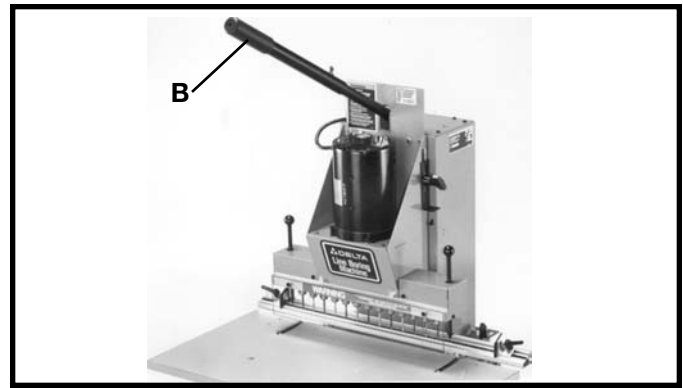


Fig. 50

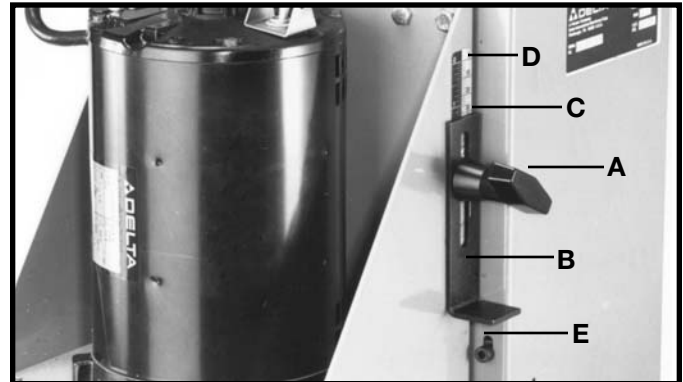


Fig. 51



Fig. 51A

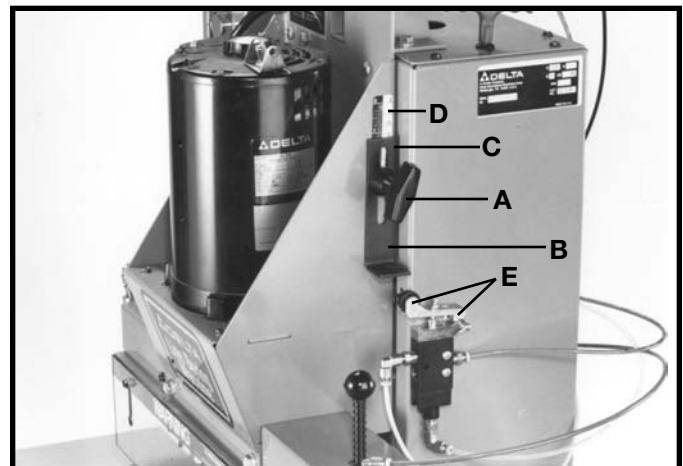


Fig. 52

2. **IMPORTANT:** Before setting the limit switch depth setting, make certain all assembly instructions for **PNEUMATIC LINE BORING MACHINES** detailed in the instruction manual have been completed. Read and understand “**STARTING AND STOPPING INSTRUCTIONS FOR PNEUMATIC LINE BORING MACHINES**”, before continuing these instructions.

Setting Limit Switch (Depth Control)

3. Place a test board (F) Fig. 54, long enough to reach both clamp cylinders (G), against the fence and under the boring bits as shown. Adjust stop bracket (C) Fig. 53, so it indicates the exact same thickness as that of the board (F) Fig. 54. (If the board is 3/4" thick, set the stop bracket (C) at 3/4" etc.).

4. Operate the unit through one cycle. Press in and hold the start button (J) Fig. 55. The two air clamps (G) Fig. 55, will activate and the clamps will start downward, clamping the board firmly against the table. In addition, the motor will start and the boring head will lower, as shown in Fig. 55.

5. If the boring bits just make contact with the surface of the wood, the depth setting is correct. If the boring bits drill into the wood, or if the boring bits do not contact the surface of the wood, an adjustment to the limit switch is necessary.

6. To adjust the limit switch (E) Fig. 53, loosen lock nut (L). **NOTE:** If the boring bits drilled into the wood, turn adjustment screw (M) Fig. 53, counterclockwise. If the boring bits did not contact the surface of the wood, turn adjustment screw (M) clockwise. Tighten locknut (L) Fig. 53.

7. Recheck limit switch depth control setting; repeat **STEPS 3** and **4** if necessary.

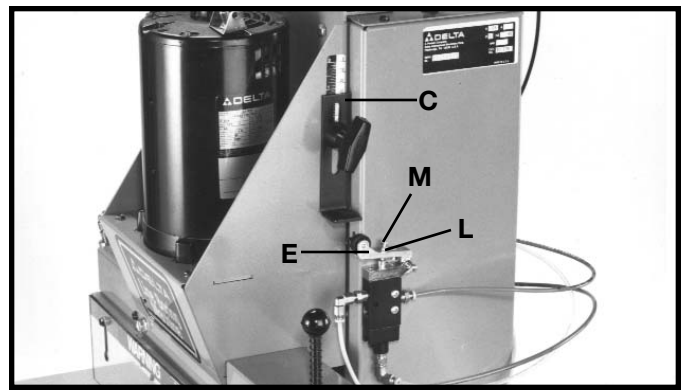


Fig. 53

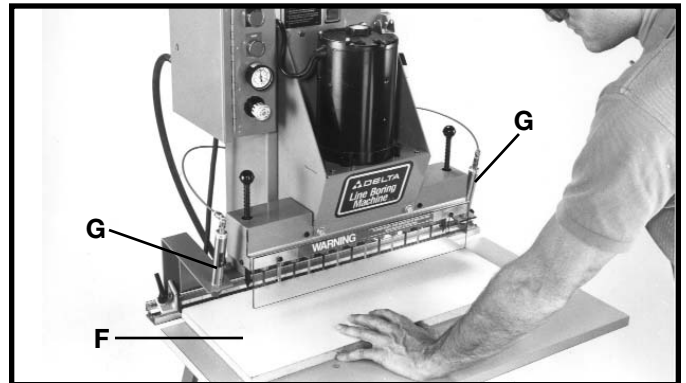


Fig. 54

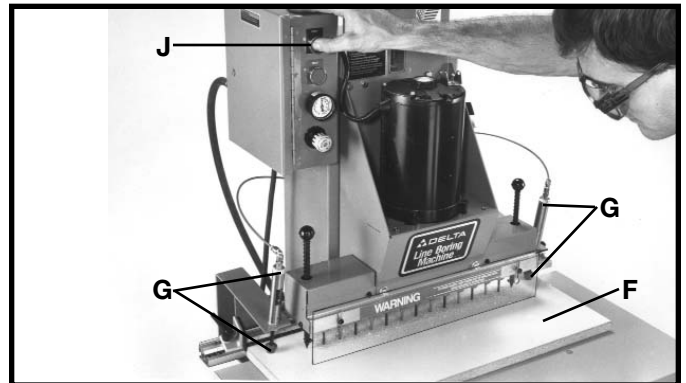


Fig. 55

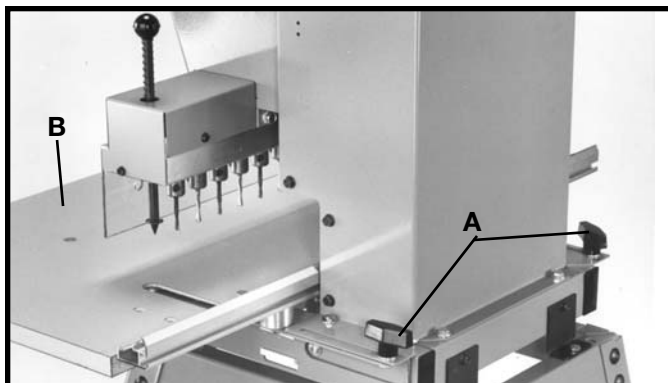


Fig. 56

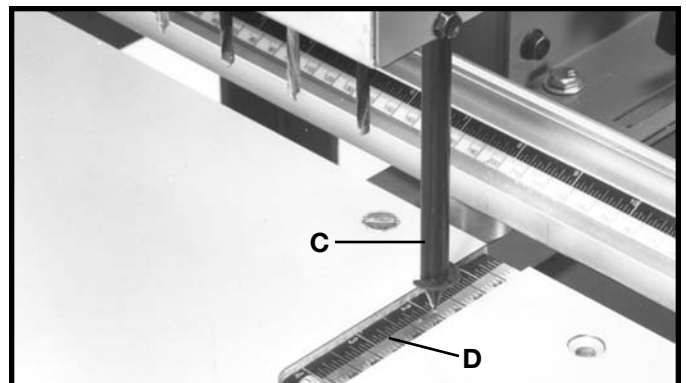


Fig. 57

MOVING FENCE AND TABLE

The fence and table can be moved in or out so that holes can be bored up to four inches from the edge of the workpiece.

Loosen table lock knobs (A) Fig. 56, and move the table (B) in or out until the index pin (C) Fig. 57, when pushed down, lines up with the desired mark on the scale (D) you wish the holes to be drilled. Then tighten lock knobs (A) Fig. 56.

FENCE STOPS

Two fence stops, one right (A) Fig. 58, and one left (B), are supplied with your boring machine. A scale (D) is provided on the fence which has a "0" mark in the center and extends 15 inches out to the left and right. The stops (A) and (B) can be moved anywhere along the fence by loosening lock handles (C), moving the stops (A) and (B), and tightening lock handles (C). **NOTE:** The lock handles (C) are spring-loaded and can be repositioned by pulling out the handle and repositioning the hub of the handle on the nut located underneath the hub.

Figure 59 illustrates the left stop. The stop is positioned 12 inches to the left from the center of the fence. The distance is read by the position of the stop (B) on the English/Metric scale (D). If the stop (B) is not to be used, the workpiece is placed against the fence and stop (B) automatically moves to the rear allowing the workpiece to be placed flush against the fence.

The following is an example of using both the left and right stops to position the workpiece when boring a series of holes one inch in from the edge of the workpiece and an additional series of holes, in line with the first series, four inches in from the other edge of the workpiece.

1. The left stop (E) Fig. 60, should be set 1" to the left of the last drill bit on the left side of the machine. The right stop (F) Fig. 60 should be set 1" to the right of the last drill bit on the right of the machine.

2. Figure 60 illustrates that we have just bored 13 holes, one inch in from the edge of the workpiece (G). The work-piece (G) is positioned against the fence with the left edge of the workpiece against the left stop (E). **NOTE:** The right stop (F) has been pushed back so the workpiece can contact the fence surface.

3. Set the fence and table so the fence is four inches away from the boring bits and turn the workpiece (G) Fig. 61, around so that the right edge of the workpiece (G) is against the right stop (F) as shown. The left stop can then be pushed back so the workpiece can contact the fence surface. Bore the additional holes, as shown in Fig. 61.

4. Figure 62 illustrates the two sets of holes bored into the workpiece using both stops.

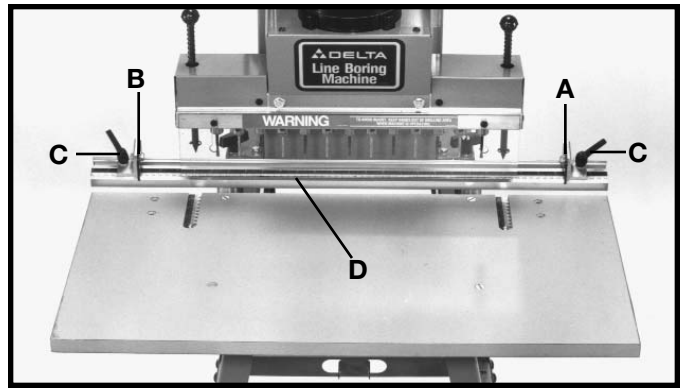


Fig. 58

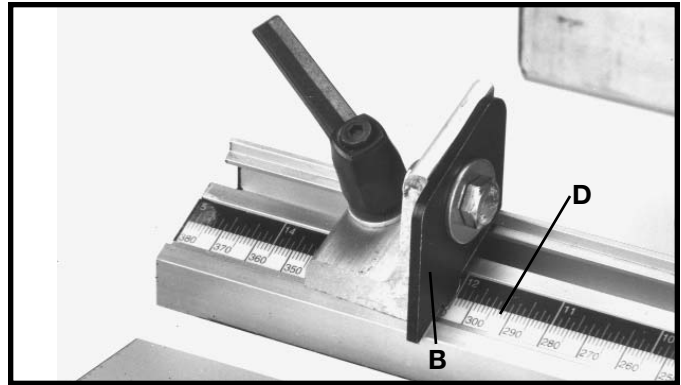


Fig. 59

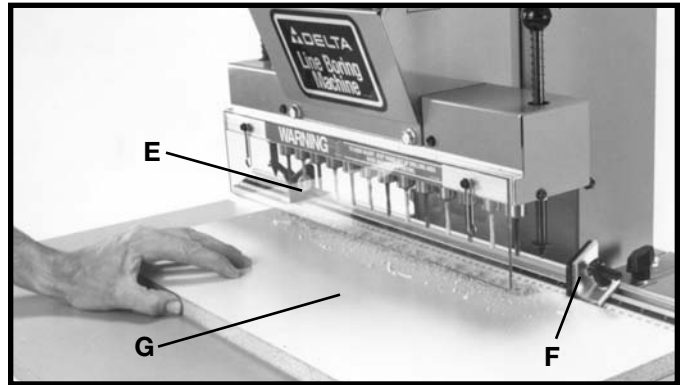


Fig. 60

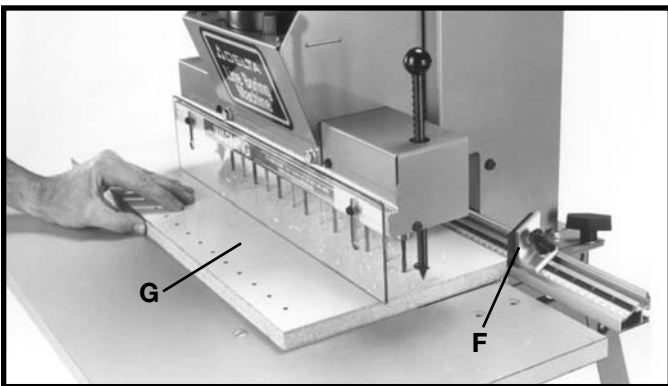


Fig. 61

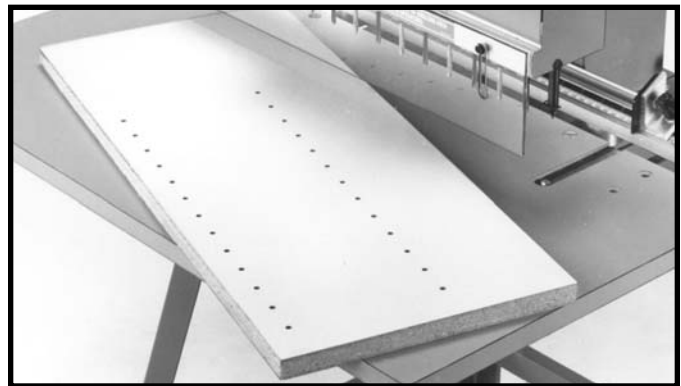


Fig. 62

OPERATION

LINE BORING

1. Figure 63 illustrates a typical line boring operation being performed on a workpiece. Note that the right end of the workpiece is positioned against the fence stop (A) and 13 holes are being bored with a 32mm center distance between each hole.

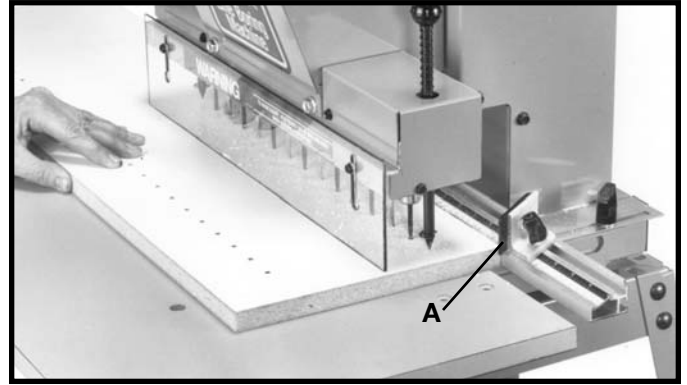


Fig. 63

2. If more than 13 holes are required, simply slide work-piece along the fence and push down on the indexing pin (B) Fig. 64, until the pointed end of the pin is in the last hole that was previously bored. This lines up the workpiece for the next series of holes. Note that the fence stop (A) has been pushed back allowing the workpiece to fit flush against the fence.

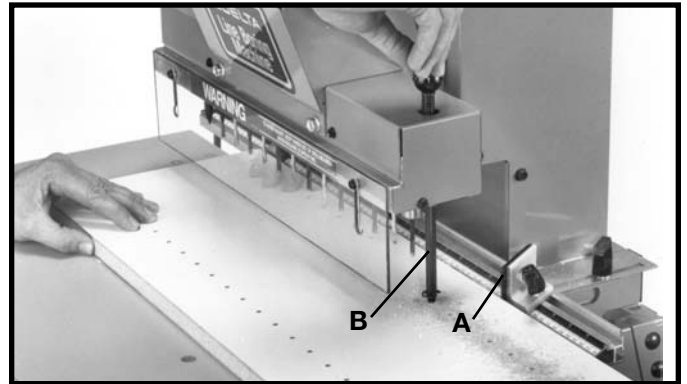


Fig. 64

3. Then bore the additional thirteen holes in the workpiece, as shown in Fig. 65. All holes are 32mm apart from each other.



Fig. 65

CORRECT OPERATING TECHNIQUE

(For 32-326 Pneumatic Line Boring Machine Only)

The following is a typical example of a line boring operation and how the electric/air controls function:

1. Place the workpiece (A) on the table and against the fence as shown in Fig. 66.

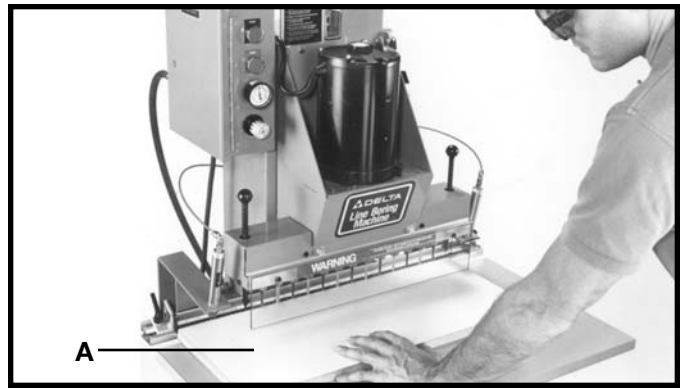


Fig. 66

2. Depress and hold the start button (B) Fig. 67. As soon as the start button (B) has been depressed, the two air clamps (C) will activate and the air clamp plungers (C) will lower, holding the workpiece firmly against the table. The motor will also turn on and the boring head will lower to its pre-set depth. After the boring operation is completed, the boring head will raise up and the motor will shut off. If you release the start button at any time during the boring cycle, the motor will shut off and the boring head will return to the up position.

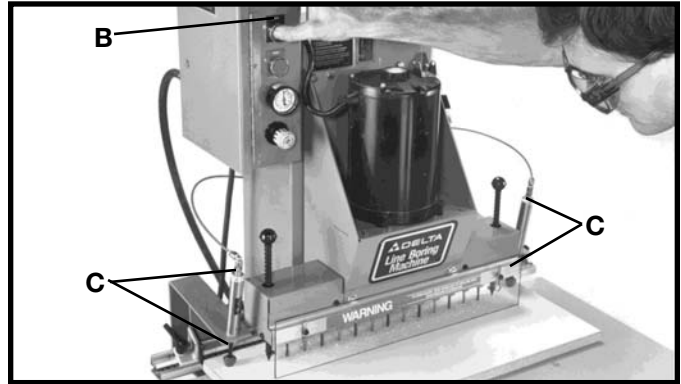


Fig. 67

3. Figure 68 illustrates the completed boring operation with the boring head in the raised position. Note that the two air clamp plungers (C) are still in the down position clamping the workpiece against the table. **NOTE:** The motor cannot be turned on until the reset button is pressed as explained in **STEP 4**.

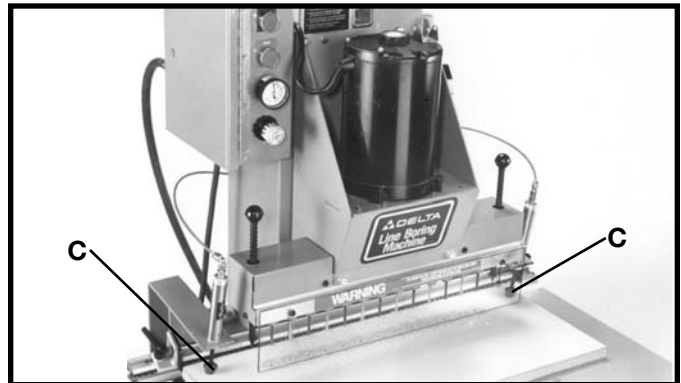


Fig. 68

4. Press the reset button (D) Fig. 69. This will raise the two air clamp plungers (C) allowing you to reposition the work-piece and re-start the machine.



Fig. 69

ACCESSORIES

A complete line of accessories is available from your Delta Supplier, Porter-Cable • Delta Factory Service Centers, and Delta Authorized Service Stations. Please visit our Web Site www.deltamachinery.com for a catalog or for the name of your nearest supplier.



WARNING: Since accessories other than those offered by Delta have not been tested with this product, use of such accessories could be hazardous. For safest operation, only Delta recommended accessories should be used with this product.



PARTS, SERVICE OR WARRANTY ASSISTANCE

All Delta Machines and accessories are manufactured to high quality standards and are serviced by a network of Porter-Cable • Delta Factory Service Centers and Delta Authorized Service Stations. To obtain additional information regarding your Delta quality product or to obtain parts, service, warranty assistance, or the location of the nearest service outlet, please call 1-800-223-7278 (In Canada call 1-800-463-3582).



Two Year Limited Warranty

Delta will repair or replace, at its expense and at its option, any Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to a Delta factory service center or authorized service station with proof of purchase of the product within two years and provides Delta with reasonable opportunity to verify the alleged defect by inspection. Delta may require that electric motors be returned prepaid to a motor manufacturer's authorized station for inspection and repair or replacement. Delta will not be responsible for any asserted defect which has resulted from normal wear, misuse, abuse or repair or alteration made or specifically authorized by anyone other than an authorized Delta service facility or representative. Under no circumstances will Delta be liable for incidental or consequential damages resulting from defective products. This warranty is Delta's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by Delta.

PORTER-CABLE • DELTA SERVICE CENTERS (CENTROS DE SERVICIO DE PORTER-CABLE • DELTA)

Parts and Repair Service for Porter-Cable • Delta Power Tools are Available at These Locations
(Obtenga Refaccion de Partes o Servicio para su Herramienta en los Siguientes Centros de Porter-Cable • Delta)

ARIZONA

Tempe 85282 (Phoenix)
2400 West Southern Avenue
Suite 105
Phone: (602) 437-1200
Fax: (602) 437-2200

CALIFORNIA

Ontario 91761 (Los Angeles)
3949A East Guasti Road
Phone: (909) 390-5555
Fax: (909) 390-5554

San Leandro 94577 (Oakland)
3039 Teagarden Street
Phone: (510) 357-9762
Fax: (510) 357-7939

FLORIDA

Davie 33314 (Miami)
4343 South State Rd. 7 (441)
Unit #107
Phone: (954) 321-6635
Fax: (954) 321-6638

Tampa 33609
4538 W. Kennedy Boulevard
Phone: (813) 877-9585
Fax: (813) 289-7948

GEORGIA

Forest Park 30297 (Atlanta)
5442 Frontage Road,
Suite 112
Phone: (404) 608-0006
Fax: (404) 608-1123

ILLINOIS

Addison 60101 (Chicago)
311 Laura Drive
Phone: (630) 628-6100
Fax: (630) 628-0023

Woodridge 60517 (Chicago)
2033 West 75th Street
Phone: (630) 910-9200
Fax: (630) 910-0360

MARYLAND

Elkridge 21075 (Baltimore)
7397-102 Washington Blvd.
Phone: (410) 799-9394
Fax: (410) 799-9398

MASSACHUSETTS

Braintree 02185 (Boston)
719 Granite Street
Phone: (781) 848-9810
Fax: (781) 848-6759

Franklin 02038 (Boston)
Franklin Industrial Park
101E Constitution Blvd.
Phone: (508) 520-8802
Fax: (508) 528-8089

MICHIGAN

Madison Heights 48071 (Detroit)
30475 Stephenson Highway
Phone: (248) 597-5000
Fax: (248) 597-5004

MINNESOTA

Minneapolis 55429
5522 Lakeland Avenue North
Phone: (763) 561-9080
Fax: (763) 561-0653

MISSOURI

North Kansas City 64116
1141 Swift Avenue
P.O. Box 12393
Phone: (816) 221-2070
Fax: (816) 221-2897

St. Louis 63119
7574 Watson Road
Phone: (314) 968-8950
Fax: (314) 968-2790

NEW YORK

Flushing 11365-1595 (N.Y.C.)
175-25 Horace Harding Expwy.
Phone: (718) 225-2040
Fax: (718) 423-9619

NORTH CAROLINA

Charlotte 28270
9129 Monroe Road, Suite 115
Phone: (704) 841-1176
Fax: (704) 708-4625

OHIO

Columbus 43214
4560 Indianola Avenue
Phone: (614) 263-0929
Fax: (614) 263-1238

Cleveland 44125
8001 Sweet Valley Drive
Unit #19
Phone: (216) 447-9030
Fax: (216) 447-3097

OREGON

Portland 97230
4916 NE 122 nd Ave.
Phone: (503) 252-0107
Fax: (503) 252-2123

PENNSYLVANIA

Willow Grove 19090
520 North York Road
Phone: (215) 658-1430
Fax: (215) 658-1433

TEXAS

Carrollton 75006 (Dallas)
1300 Interstate 35 N, Suite 112
Phone: (972) 446-2996
Fax: (972) 446-8157

Houston 77055
West 10 Business Center
1008 Wirt Road, Suite 120
Phone: (713) 682-0334
Fax: (713) 682-4867

WASHINGTON

Auburn 98001 (Seattle)
3320 West Valley HWY, North
Building D, Suite 111
Phone: (253) 333-8353
Fax: (253) 333-9613

Authorized Service Stations are located in many large cities. Telephone **800-438-2486** or **731-541-6042** for assistance locating one. Parts and accessories for Porter-Cable-Delta products should be obtained by contacting any Porter-Cable-Delta Distributor, Authorized Service Center, or Porter-Cable-Delta Factory Service Center. If you do not have access to any of these, call **800-223-7278** and you will be directed to the nearest Porter-Cable-Delta Factory Service Center. Las Estaciones de Servicio Autorizadas están ubicadas en muchas grandes ciudades. Llame al **800-438-2486** ó al **731-541-6042** para obtener asistencia a fin de localizar una. Las piezas y los accesorios para los productos Porter-Cable-Delta deben obtenerse poniéndose en contacto con cualquier distribuidor Porter-Cable-Delta, Centro de Servicio Autorizado o Centro de Servicio de Fábrica Porter-Cable-Delta. Si no tiene acceso a ninguna de estas opciones, llame al **800-223-7278** y le dirigirán al Centro de Servicio de Fábrica Porter-Cable-Delta más cercano.

CANADIAN PORTER-CABLE • DELTA SERVICE CENTERS

ALBERTA

Bay 6, 2520-23rd St. N.E.
Calgary, Alberta
T2E 8L2
Phone: (403) 735-6166
Fax: (403) 735-6144

BRITISH COLUMBIA

8520 Baxter Place
Burnaby, B.C.
V5A 4T8
Phone: (604) 420-0102
Fax: (604) 420-3522

MANITOBA

1699 Dublin Avenue
Winnipeg, Manitoba
R3H 0H2
Phone: (204) 633-9259
Fax: (204) 632-1976

ONTARIO

505 Southgate Drive
Guelph, Ontario
N1H 6M7
Phone: (519) 836-2840
Fax: (519) 767-4131

QUÉBEC

1515 Ave.
St-Jean Baptiste,
Québec, Québec
G2E 5E2
Phone: (418) 877-7112
Fax: (418) 877-7123

1447, Begin
St-Laurent, (Montréal),
Québec
H4R 1V8
Phone: (514) 336-8772
Fax: (514) 336-3505

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